



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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END THIS COPY TO FILE  
AFTER BOARD PRESENTATION  
M/045/037

May 16, 1995

TO: Board of Oil, Gas and Mining

THRU: James W. Carter, Director *JWC*

THRU: D. Wayne Hedberg, Permit Supervisor *DWH*

FROM: Anthony A. Gallegos, Senior Reclamation Specialist *aa*

RE: Request for Board Approval, Amount & Form of Reclamation Surety, Morton Salt Division, Grantsville Operations, M/045/037, Tooele, County, Utah

The Division seeks Board approval of the amount and form of Reclamation Surety provided by Morton Salt Division for the Grantsville Operations. This matter was last presented to the Board in February 1995. At that time the Board conditionally approved of the surety provided no adverse comments were received during the public comment period.

On March 6, 1995, the Division received written comment from Mr. Don C. Worthington regarding Morton's intake canal adjacent to his property on Stansbury Island. On March 17, 1995, the Division inspected the intake canal area in the company of Mr. Worthington and Morton personnel. A copy of that inspection memo is attached. During that inspection there were no visible signs of salt contamination on Mr. Worthington's property; however, Morton was not pumping water into the canal at that time. Mr. Worthington's property is generally upgradient of the canal system. The Division will perform another inspection of the area sometime during active pumping.

By letter dated April 28, 1995, Morton has formally amended their reclamation plan to include backfilling, regrading and seeding of the main intake canal. The Division estimated the cost of this work to be \$18,770 which is approximately 1.47% of the total surety amount of \$1,273,000 currently posted by Morton. This additional amount is not considered significant enough to warrant changing the surety at this time. The surety amount will be adjusted to include reclamation of the intake canal when the bond undergoes a review five years from now.

*\$1,273,000 BOND*

A revised Executive Summary and the March 17, 1995, inspection memo is attached for your review. Thank you for your time and consideration of this request.

jb  
Attachments  
M045037.BD2

## EXECUTIVE SUMMARY

Revised May 16, 1995

**Mine Name:** Grantsville Operations **I.D. No:** M/045/037  
**Operator:** Morton Salt Division **County:** Tooele  
P. O. Box 506 **New/Existing:** Existing  
Grantsville, Utah 84029-0506 **Mineral Ownership:** State of Utah  
**Surface Ownership:** Morton International, Inc.  
State of Utah, BLM - public domain, USA - public domain  
**Telephone:** (801) 250-6335 **Lease No.(s):** N/A  
**Fax:** (801) 250-6306

**Contact Person:** Gary C. Price, Grantsville, Utah; or Thomas D. Anders, Chicago, Illinois  
(312) 807-2673

**Permit Term:** Life of Mine

**Life of Mine:** 100+ years

**Legal Description:** sec. 19, T1N, R5W, secs. 24, 25, 26, 32, 33, 34, 35 T1N, R6W; secs 16, 19, 20, 21 T1S, R5W; secs 1, 2, 3, 10, 11, 12, 13, 14, 15 T1S, R7W; secs. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 T1S, R6W, SLBM, Tooele County

**Mineral(s) to be Mined:** Salt (NaCl)

**Mining Methods:** Solar evaporation

**Acres to be Disturbed:** Total 7,849 acres; 7,686 acre minesite, 130 acre access roads, 33 acres onsite processing facilities

**Present Land Use:** Mining by solar evaporation, public recreational access to Stansbury Island, brine shrimp operations

**Postmining Land Use:** Continued mining, continued public access, allowing the area to return to lakebed playa conditions

**Variances from Reclamation Standards (Rule R647) Granted:** R647-4-111.9 Reclamation Practices-Dams and Impoundments: The county road to Stansbury Island which acts as an impoundment will be allowed to remain. The road bed is owned and maintained by Tooele County. The outer dike located east and west of the county road may remain as flood protection under the State or County's control. If neither party wishes to assume responsibility for the outer dike, Morton will breach the dike and allow the natural lake processes to return the area to its natural state. R647-4-111.13 Reclamation Practices-Revegetation: The solar ponds, crystallizers and



stockpile areas are not required to receive revegetation treatments. Enclosure #4 Grantsville Facility Base Map shows the areas for which vegetation variances are requested. The area which will be revegetated is indicated on the Reclamation Site Map.

### **Soils and Geology:**

**Soil Description:** (General project area) A majority of the project site involves the Saltair Playas complex soil type. This soil is very deep and poorly drained. It is typically strongly saline. The surface layer varies from silty loam, silty clay loam, and sandy loam. This soil is saturated with water most of the year. There are small areas of well drained Skumpah soils under shadscale and greasewood, sandy Dynal soils on vegetated oolitic dunes, poorly drained Logan soils in drainageways and seeps under inland saltgrass and rushes, and sandy Yenrab soils on vegetated sand dunes.

**pH:** \_\_\_\_\_

**Special Handling Problems:** \_\_\_\_\_

**Geology Description:** The Morton facility is located on the lakebed alluvial plain of Tooele Valley. Surface relief to the south is relatively flat and to the north as well until the rise for Stansbury Island. Subsurface geology is a nondescript stratigraphy of alluvial deposits including sands and silts with occasional clays in the form of lenses.

### **Hydrology:**

**Ground Water Description:** The hydrogeology of the area is a gently north sloping water table at from 6 to 8 feet below grade. Hydrology of the surrounding area is northerly surface drainage which would reestablish itself easily post mining.

**Surface Water Description:** The permitted UPDES discharge contains residual water from the pond evaporation system and discharge from the processing plant. This discharge shall contain only materials originally present in the intake waters and nothing shall be added prior to discharge.

**Water Monitoring Plan:** UPDES Permit UT0000523 was acquired from American Salt Company as part of the purchase transaction. The permit requires monitoring of surface water discharges. A General Permit for Stormwater Discharges has been issued to the Grantsville facility. A copy of the Stormwater Pollution Prevention Plan will be provided to the Division. An oil/water separator is maintained to keep oil and grease from truck bays and wash areas from getting into the lake.



### **Ecology:**

**Vegetation Type(s); Dominant Species:** The salt evaporating ponds are located on alkali/mud flats comprised of sodium saturated clay soils with sparse vegetation. This vegetation community was not intensively sampled. An undisturbed vegetation reference area has been set aside by Morton. The reference area represents the salt-desert shrub rangelands occupied by the Morton Salt Facilities. This vegetation type is present on approximately 2% (300 acres) of the total Morton Salt acreage. The undisturbed reference area is a black greasewood, shadscale saltbush community type. Predominant perennial species include black greasewood, shadscale saltbush, prickly pear cactus, and Sandberg bluegrass. Annual weedy species include clasping pepperweed, downy brome, Japanese brome, kochia, and Russian thistle. Other species observed in the reference area include Gardner saltbush, bush seepweed, foxtail barley and prickly lettuce. Vegetation species observed along revegetated roadside shoulders west of the Morton Salt facilities include common reclamation species such as alkali sacaton, alkaligrass, indian ricegrass, tall wheatgrass, and rabbitbrush.

**Percent Surrounding Vegetative Cover:** Total vegetation cover is 33.1% with perennial species comprising 12.2% while annual weedy species comprise 20.9%.

**Wildlife Concerns:** None known.

**Surface Facilities:** Bagging warehouse, warehouse, bag vault, west warehouse, west docks, south warehouse, new tower, compactor building, dryer room, old tower, bulk loading & scales, old office, new office, shop, new maintenance building, new mobile equipment building, fuel area, wash plant, long belt, incline belt, pump houses, key minerals building, chicken coops, north docks/wet scrubber, salt stockpiles, salt evaporation ponds, access/service roads, dikes, canals.

### **Mining and Reclamation Plan Summary:**

#### **During Operations**

This is an existing salt evaporation operation previously owned by North American Salt Company. Salt is scraped from the ponds using a harvester. The salt is conveyed into a trailer towed behind the harvester. The solar evaporative salt is hauled to the wash plant where it is washed using lake water. The salt is conveyed to a double-wing stacker and stockpiled for storage. Salt is conveyed to the mill by front end loader and conveyor. In the mill, the salt is dried, graded and bagged, or processed into one of several product lines.

#### **After Operations**

All processing facilities, buildings/structures will be demolished and the debris removed from the site. Areas indicated on the Reclamation Site Map will be ripped and turned after the structures

are removed (approximately 26.16 acres). Areas in and around the main processing facilities would be backfilled and graded as needed. Approximately 15.49 acres will be seeded using a seedmix recommended by the Division. Dikes in the crystallizer will be smoothed down. Dikes to be leveled are indicated on enclosure #6 Dike Leveling Map. There will be some grading of material back into the canals. The remaining canals will be left to erode naturally. Any residual stockpiled material will be removed and sold. The road to Stansbury Island will not be affected by reclamation. The outer dike will remain for flood control if so desired by the County or State at the time of reclamation. Approximately 11,000 feet of the main intake canal will be backfilled with the available bank materials, regraded/contoured, and then seeded as part of final reclamation.

**Surety:**

**Amount:** \$1,273,000 (1998-\$)

**Form:** Surety Bond (Safeco Insurance Company of America)

**Renewable Term:** five year review





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March 20, 1995

TO: Minerals File

FROM: Tony Gallegos, Reclamation Engineer *aa*

RE: Site Inspection, Morton International - Morton Salt, Grantsville Operations,  
M/045/037, Tooele County, Utah

Date of Inspection: March 17, 1995  
Time of Inspection: 1430 - 1650  
Conditions: Clear skies  
Participants: Gary Price, Nate Tuttle, Morton Salt; Don C. Worthington, adjacent landowner; Wayne Hedberg, Tony Gallegos, DOGM

Purpose of Inspection: To examine Morton's main intake canal located on the southeast tip of Stansbury Island in response to Mr. Worthington's letter.

We met Mr. Price and Mr. Tuttle at the Morton plant offices. Mr. Price informed us their corporate office was researching the land ownership and right-of-way issue for the main intake canal area. Thus far, their research indicates they have a right-of-way agreement extending two rods in width from the centerline of the canal. A copy of the actual right-of-way agreement has not been found yet. Mr. Price stated he believed that their title policy indicates Morton presently owns the area encompassed under the right-of-way agreement. We informed Mr. Price that the purpose of this inspection was to determine if Mr. Worthington's written comments are of substance and warrant further action by the Division or Board.

We then drove to the intake canal area to meet Mr. Worthington. We first drove on the road north of the intake canal. This road leads to private property owned by Mr. Worthington and also property owned by Sixmile Ranch. The road crosses BLM lands and has a locked gate on the private portion. The road south of the canal is on Morton's property and leads to their pumping station.

Mr. Worthington and his family have a long association with the property in this area and the salt operations over the years. He informed us that he believed the original canal was first excavated around 1938. At that time, the canal would be better described as



a ditch. Around 1954 (could have been late 40's or early 50's) the ditch was apparently enlarged approximately to its existing size. Mr. Worthington believes his family sold approximately nine acres to the salt company around 1947. These nine acres made up the right-of-way along the canal route. Several salt companies have owned/operated this mining operation over the years. Sol Aire Salt built the salt processing plant in its present location around 1964.

We examined the canal area adjacent to Mr. Worthington's property in the NW/4 NW/4 sec. 35, T1N, R6W. This is where the gate on private property is located. At this location there was standing water in the canal. Mr. Price indicated the standing water was from snow and rainfall events or residual water left in the canal after Morton's pumping ceased last year. Morton usually pumps water into this canal from the end of March through September. Morton had not started pumping at the time of this inspection. At this location the canal is approximately 10-15 feet wide, 6-8 feet deep (from the surface elevation). The banks of the canal appear to have been built up using materials dredged from the canal or from other materials on site. The affected area of the canal from toe to toe of the bank outslope is approximately 20-25 feet in width. At this first location the canal is down gradient from Mr. Worthington's property. There were no obvious signs of surface salt crusting or vegetation damage due to salt seepage in this area. Vegetation in this area is mainly salt tolerant grass and shrub species. Photographs were taken of the canal and vegetation at this location.

We then drove further northeast along the road to examine a low spot/drainage in the NE/4 SE/4 Sec 26. This is the location of a small drainage basin. This area is lower than the adjacent topography; however it is believed to be higher in elevation than the canal. Mr. Worthington indicated that he believed this area may be showing some signs of vegetative stress that could be related to seepage from the adjacent canal. The canal was located approximately 75-100 feet from this topographic low. It was difficult to substantiate Mr. Worthington's assumption. It appeared that there may be some minor vegetative stress, but it could be attributed to the intermittent ponding of surface runoff from the local watershed drainage pattern. We found no evidence of salt crusting in this area. Photographs were taken of this area as well.

We then drove back to the main road intersection and turned onto the road south of the canal on Morton's property. Mr. Worthington did not accompany us on this portion of the inspection. We proceeded to Morton's pumping station located in the NW/4 Sec 25. Morton has not yet started pumping operations for this season. Photographs were taken of the pumping station.

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M/045/037  
March 20, 1995

We then examined the south side of the canal in several locations. The lands south of the canal are down gradient and the canal bank is constructed of fill. Some signs of seepage through the canal bank are evident; however, the vegetation growing on the south canal bank did not appear to be suffering from salt seepage. Vegetation on the ground surface below the toe of the canal bank did appear to suffer from salt water seepage and/or inundation. Mr. Tuttle informed us this area is occasionally under water during operations. Photographs were taken of the canal's south bank and the associated vegetation.

In conclusion, there was no evidence of salt water seepage impacts to the vegetation on Mr. Worthington's property at the time of this inspection. There were signs of seepage in the south bank of the canal and damaged vegetation on the ground south of the canal. It was suggested that the site be revisited while Morton is pumping to look for signs of seepage when the canal is running at capacity.

We informed Mr. Price that we would present these findings to the Board at the next scheduled hearing and notify him of any decision. During the inspection we raised the point that reclamation of the intake canal is not included in the current mining and reclamation plan and this may need to be addressed. Mr. Price indicated Morton would continue searching for documentation of the right-of-way agreement or property sale.

jb

cc: Gary Price, Morton  
Don Worthington, Landowner  
Lowell Braxton, Associate Director, DOGM  
Minerals Staff (route)  
M45-37.MEM